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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/155,590	09/30/1998	JEFFREY SCHLOM	2026-4230US1	8846

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OFFICE OF TECHNOLOGY TRANSFER
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EXAMINER	
CANELLA, KAREN A	

ART UNIT	PAPER NUMBER
1643	

DATE MAILED: 05/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/155,590	SCHLOM ET AL.	
	Examiner	Art Unit	
	Karen A. Canella	1643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *10-15,25,27,32-34,66-68 and 70-72* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *10-15,25,27,32-34,66-68 and 70-72* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 11/26/06
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 26, 2006 has been entered.

Claim 72 has been amended. Claims 10-15, 25, 27, 32-34, 66-68 and 70-72 are pending and under consideration.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 10-15, 25, 27, 32-34, 66-68 and 70-72 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 10 has been amended to a mutant ras peptide comprising an amino acid sequence of at least 8 amino acids, from the sequence consisting of Xaa1 Leu Xaa2 Val Val Gly Ala Xaa3 Gly Val Gly Lys Ser (SEQ ID NO:15), wherein Xaa1 is Lys or Tyr, wherein Xaa2 is any amino acid, wherein Xaa3 is Asp, Val, Cys, Aln, Arg or Ser, and wherein when Xaa2=Val, then Xaa1=Tyr. Firstly, it is noted that the originally filed Sequence Listing including only SEQ ID NO:1-13; secondly, originally filed claim 10 is drawn to a mutant ras peptide comprising Xaa1 Leu Xaa2 Val Val Gly Ala Xaa3 Gly Val, wherein Xaa1 is Lys or Tyr, wherein Xaa2 is any amino acid, wherein Xaa3 is Asp, Val, Cys, Aln, Arg or Ser, and wherein when Xaa2=Val, then Xaa1=Tyr. This genus of peptides fails to support the instant genus of peptides encompassed by claims 10-15, 25, 27, 32-34, 66-68, 70 and 71 because the instant genus requires a ras peptide comprising at least 8 amino acids derived from the longer SEQ ID NO:15. this is in contrast to the originally filed claim 10 which is a genus comprising the 10-mer sequence not having the additional Gly Lys Ser at the carboxylic

terminus. Thus the instant genus of peptides encompassed by claim 10 differs from the originally disclosed genus of peptides because the instant genus requires only 8 amino acids from a sequence that is a 13-mer rather than a 10 mer. The specification as filed provides only one specific peptide, Y5D12 (SEQ ID NO:11) in figure 11 and on page 47, lines 26-35, having a Tyr residue at position 5, and Asp at position 12. One of skill in the art would reasonable conclude that applicant was not in possession of the instant invention..

Claim 72 is drawn to a mutant ras peptide comprising an amino acid sequence of at least 8 amino acids, from the sequence consisting of Try Xaa1 Leu Xaa2 Val Val Gly Ala Xaa3 Gly Val Gly Lys Ser (SEQ ID NO:16), wherein Xaa1 is Lys or Tyr, wherein Xaa2 is any amino acid, wherein Xaa3 is Asp, Val, Cys, Aln, Arg or Ser, and wherein when Xaa2=Val, then Xaa1=Tyr. It is again noted that SEQ ID NO:16 was not part of the original disclosure. Further, the genus of peptides encompassed by this claim is not supported by the specification or claims as originally filed. as stated about, originally filed claim 10 requires a peptide comprising 10 amino acids. the instant claim requires a peptide comprising 8 amino acids from SEQ ID NO:16 which incorporates an additional Gly Lys Ser on the carboxylic terminus and an additional Tyr at the amino terminus. The specification states on page 47, lines 26-32 that Tyr variants of ras 5-14(Asp12) display higher binding activity than the native peptide sequence to HLA-A2 and appear to sensitize targets to lysis better than the native peptide sequence. The specification refers to Figure 11, however there is no peptide having a Tyr at position 4. The Tyr variant in figure 11 is at position 5. One of skill in the art would reasonable conclude that applicant was not in possession of the instant invention.

Claims 10-12, 14, 25, 27, 32, 33, 34, 68, 70, 71 and 72 are rejected under 35 U.S.C. 102(b) as being anticipated by Gaudernack et al (WO 92/14756).

Claim 10 is drawn to a mutant ras peptide comprising an amino acid sequence of at least 8 amino acids, from the sequence consisting of Xaa1 Leu Xaa2 Val Val Gly Ala Xaa3 Gly Val Gly Lys Ser (SEQ ID NO:15), wherein Xaa1 is Lys or Tyr, wherein Xaa2 is any amino acid,

wherein Xaa3 is Asp, Val, Cys, Aln, Arg or Ser, and wherein when Xaa2=Val, then Xaa1=Tyr and wherein said peptide elicits a peptide-specific human CD8 CTL immune response.

Claim 72 is drawn to a mutant ras peptide comprising an amino acid sequence of at least 8 amino acids, from the sequence consisting of Try Xaa1 Leu Xaa2 Val Val Gly Ala Xaa3 Gly Val Gly Lys Ser (SEQ ID NO:16), wherein Xaa1 is Lys or Tyr, wherein Xaa2 is any amino acid, wherein Xaa3 is Asp, Val, Cys, Aln, Arg or Ser, and wherein when Xaa2=Val, then Xaa1=Tyr and wherein said peptide elicits a peptide-specific human CD8 CTL immune response.

Claim 11 embodies the peptide of claims 10 or 72 wherein said peptide comprises an amino acid sequence of 13 amino acids. claim 12 embodies the peptide of claims 10 or 72, wherein the peptide comprises an amino acid sequence of 10 amino acids. Claim 14 embodies the peptide of claims 10 or 72, wherein Xaa2 is Val, Trp, Leu, Tyr or Phe.

Claim 25 is drawn to a mutant ras peptide carrier molecule conjugate comprising the peptide of claim 10 or 72 and a carrier molecule wherein said carrier molecule enhances the immunogenicity of the peptide. Claim 27 is drawn to an immunogenic peptide for eliciting a mutant ras peptide specific human CD8 CTL immune response comprising a peptide of claim 10 or 72 wherein the immunogenic peptide elicits a peptide specific human CD8 CTL immune response. Claim 32 is drawn to a pharmaceutical composition comprising the peptide of claim 10 or 72 and a pharmaceutically acceptable carrier. Claim 33 embodies the composition of claim 32 further comprising a biological response modifier. Claim 68 embodies the composition of claim 32 wherein the biological response modifier is Il-2. Claim 70 embodies the composition of claim 32 further comprising Il-2, Il-6, Il-12, INF, TNF, GM-CSF, beta2-microglobulin or combinations thereof. Claim 71 embodies the composition of claim 32 further comprising a liposome formulation, an APC or an adjuvant comprising Mycobacterial Cell Wall skeleton and monophosporyl lipid A.

Gaudernack et al disclose ras peptides on page 31, lines 6-9, 11 and 12 of the last paragraph, and page 32, lines 5-16, which meet the specific embodiments of the instant claims 10-12, 14 and 72. Gaudernack et al disclose the administration of said peptides with a pharmaceutical carrier (page 13, lines 9-12) and the biological response modifier of Il-2 (page 12, lines 4-8), which meets the specific embodiments of claims 32, 33, 68, 70. Gaudernack et al

disclose the administration of said peptides in the form of lipopeptide conjugates (page 12, lines 14-19) which fulfills the specific embodiment of claim 71 requiring a "liposome formulation".

Claims 10-12, 14, 25, 27, 32-34, 66-68 and 70-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gaudernack et al (WO 92/14756) in view of Etlinger (EP 429,816).

Claim 66 embodies the conjugate of claim 25 wherein the carrier molecule is selected from a group including tetanus toxoid-CD4 epitope. Claim 67 embodies the peptide of claim 25 wherein the carrier molecule is tetanus toxoid.

Etlinger teaches a method for inducing a humoral response comprising the administration of an antigen which comprises a B-cell epitope linked to a carrier protein, wherein said carrier protein comprises a T-cell helper epitope devoid of T suppressor function (page 2, lines 17-25 and page 4, lines 14-28 and page 4, line 49 to page 5, line 9) fulfilling the specific embodiment of claim 15, drawn to a carrier. Etlinger teaches examples of carrier proteins as de-toxified tetanus toxin or diphtheria toxin, thus fulfilling the specific embodiment of claims 66 and 67 requiring tetanus toxoid (page 2, lines 27-30). Etlinger teaches that the B-cell epitopes are capable of inducing the formation of antibodies which bind to the native molecule in a host (page 2, lines 18-22).

It would have been prima facie obvious at the time the claimed invention was made to use the de-toxified tetanus toxin as a carrier for the ras fragments taught by Gaudernack et al. One of skill in the art would have been motivated to do so by the teachings of Etlinger et al on the increase in antigenicity afforded to an antigen when administered with a T-cell helper epitope such as tetanus toxoid. One of skill in the art would have been motivated to combine the teachings of the two references because Gaudernack et al teach that the administered ras peptides evoked a humoral response, and Etlinger et al teach a means for increase a humoral response.

All claims are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karen A. Canella whose telephone number is (571)272-0828. The examiner can normally be reached on 11 am to 10 pm, except Wed, Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Helms can be reached on (571)272-0832. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Karen A. Canella, Ph.D.
5/13/2006